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Metrology for Electromagnetic Technology: A Bibliography of NIST Publications

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Metrology for Electromagnetic Technology: A Bibliography of NIST Publications

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A.G. Bradford

Electromagnetic Technology Division
Electronics and Electrical Engineering Laboratory
National Institute of Standards and Technology
Boulder, Colorado 80303-3328

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METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NIST PUBLICATIONS

Ann G. Bradford, Editor

This bibliography lists the publications of the personnel of the Electromagnetic Technology Division of NIST during the period from January 1970 through publication of this report. A few earlier references that are directly related to the present work of the Division are also included. This edition of the bibliography is the first since the Electromagnetic Technology Division split into two Divisions, and it includes publications in cryoelectronic metrology and superconductor and magnetic measurements. The optical electronic metrology section found in earlier editions is now being produced separately by the new Optoelectronics Division of NIST. That companion bibliography to this publication is NISTIR 5041.

Key words: cryoelectronics; electromagnetic metrology; X-ray detectors; voltage standards; Josephson junctions; superconductivity; magnetics; magnetic recording; magnetic imaging

INTRODUCTION

The Electromagnetic Technology Division was formed during the reorganization of the National Bureau of Standards (now the National Institute of Standards and Technology) in April 1978 by combining parts of the former Electromagnetics and Cryogenics Divisions. It developed measurement methods and standards and provided metrological support for laser systems, optical communication equipment, cryoelectronics, magnetics, superconductors, and other unusual electrical engineering materials. This bibliography covers a period beginning some time before the reorganization and includes at least the more recent origins of the present work of the division. The editor has attempted to include all work published by staff members of the division, while they were employees of NIST, in the period from January 1970 through publication of this report. There are a few exceptions, where work that is totally unrelated to the present program has been excluded or where work by authors now in other parts of NIST has been included because of its special significance. A few papers on various topics published before 1970 have also been included because of their direct relationship to the present program.

In addition to the companion bibliography listing the publications of the new Optoelectronics Division, several other sources may be useful to the reader who is interested in activities at NIST connected with electromagnetic metrology. NISTIR 5039 lists the publications of the Electromagnetic Fields Division. Its topics include metrology for antennas, satellite communications equipment, microwaves, electromagnetic waveforms, and electromagnetic fields and interference. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the Proceedings of the IEEE (vol. 55, June 1967). Advances in the following decade were described in two other special issues of the same journal (vol. 66, April 1978, and vol. 74, January 1986).

A Note on Abbreviations

NOTE: On August 23, 1988, the National Bureau of Standards (NBS) became the National Institute of Standards and Technology (NIST); therefore, documents with either prefix are considered NIST publications.

Most readers are familiar with the commonly used abbreviations for the names of the professional journals that appear in this bibliography. Some publication series are peculiar to NIST and may call for explanation. They are:

NIST IR - NIST Interagency/Internal Report	NBS IR - NBS Interagency/Internal Report
NIST TN - NIST Technical Note	NBS TN - NBS Technical Note
NIST SP - NIST Special Publication	NBS SP - NBS Special Publication
NIST HB - NIST Handbook	NBS HB - NBS Handbook
NIST JRES - NIST Journal of Research	NBS JRES - NBS Journal of Research
NIST MN - NIST Monograph	NBS MN - NBS Monograph

Purchase Procedures and Document Availability

NIST (NBS) Technical Notes, Special Publications, Handbooks, Journals of Research, and Monographs may be purchased from the U.S. Government Printing Office at the following address: New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Orders may be paid by major credit card, NTIS Deposit Account, or check or money order payable in U.S. dollars to the Superintendent of Documents. The Government Printing Office usually stocks these publications for only a year or two, after which they may be purchased from the National Technical Information Service at the address listed below.

NIST (NBS) Interagency/Internal Reports (NISTIRs, NBSIRs) may be purchased from the National Technical Information Service, Springfield, VA 22161, (703) 487-4650. Orders may be paid by major credit card, NTIS Deposit Account, or check or money order payable in U.S. dollars to NTIS.

Reprints of papers published in non-NIST media may be available in limited quantities from the authors.

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